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THE CONFERENCE BOARD

Capital Stock

Economic Road Maps
Nos. 1896–1897

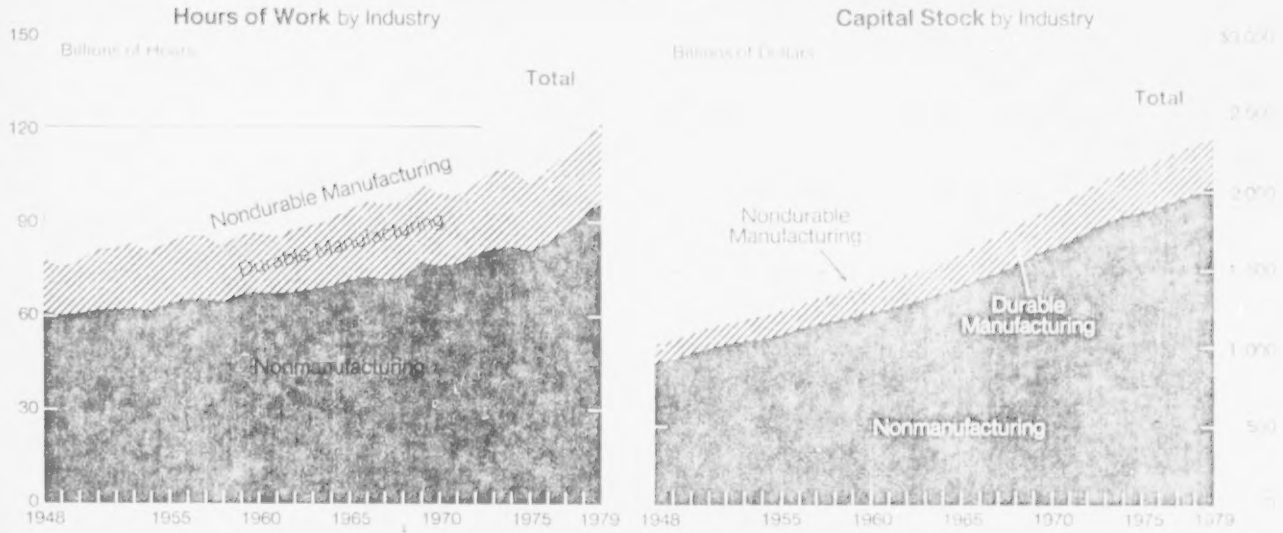
February, 1981

Virtually all of the goods and services in our economy are produced by using some labor and some capital (buildings, machines, tools, etc.) to turn raw materials or ideas into finished products. But different products require different levels of labor and capital inputs. Some processes are relatively labor intensive—that is, they require more labor inputs relative to capital input. Other processes, of course, are relatively capital intensive. There has been very little shift in these relative intensities over the last three decades. That is, the relatively labor-intensive industries of today, such as leather or apparel production, were also the relatively labor-intensive ones 30 years ago. Likewise, petroleum refining was then and is now one of the most capital-intensive processes. Throughout the economy, however, there has been a general uptrend in the amount of capital relative to the number of workers; that is, in an absolute sense, the entire economy has become more capital intensive.

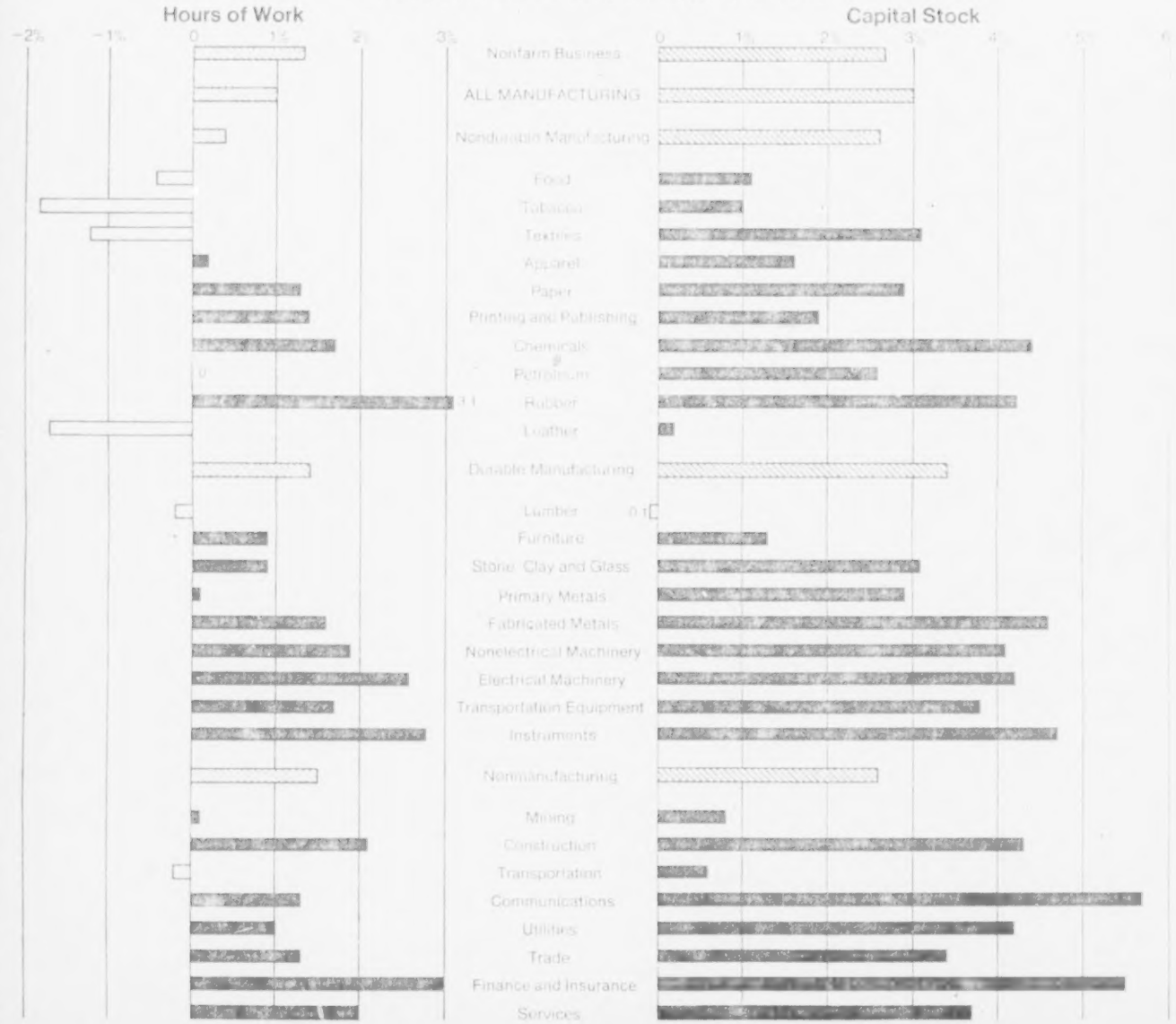
Capital / Labor Ratio
Capital Stock Per Hour Worked

Constant 1972 Dollars

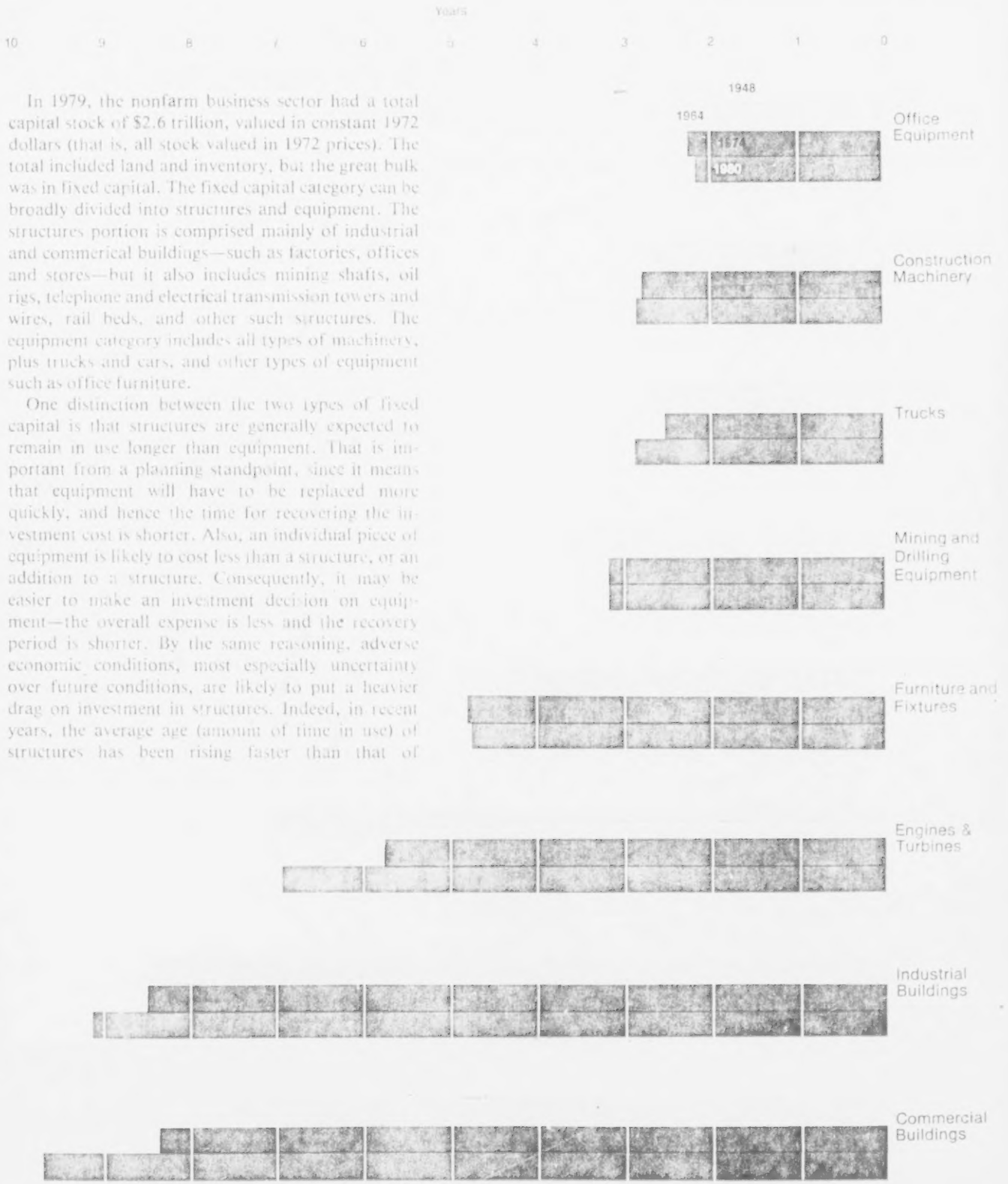
Factors of Production: Labor and Capital



Average Annual Percent Change, 1948-1979



Estimated Average Age of Selected Plant and Equipment

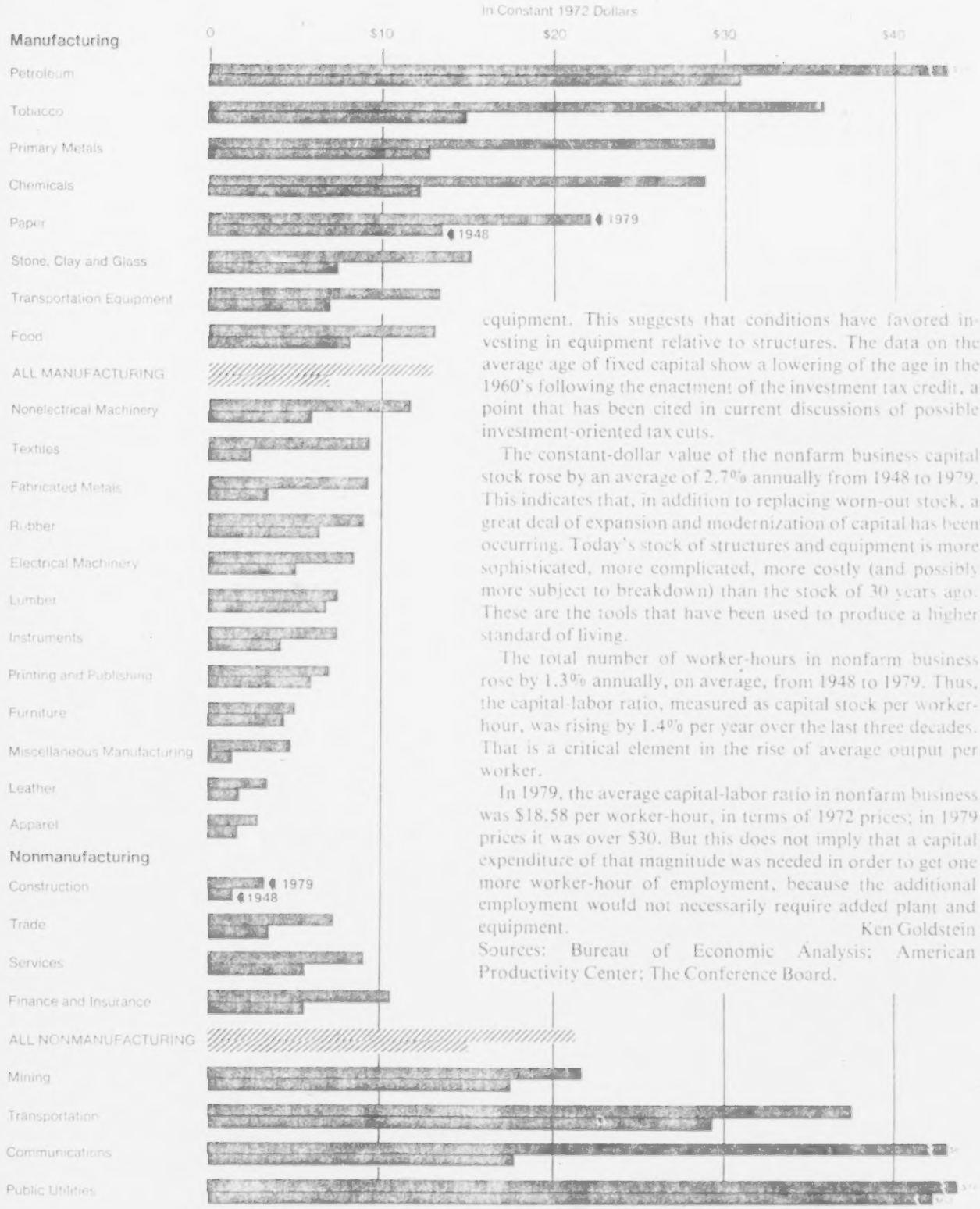


In 1979, the nonfarm business sector had a total capital stock of $2.6 trillion, valued in constant 1972 dollars (that is, all stock valued in 1972 prices). The total included land and inventory, but the great bulk was in fixed capital. The fixed capital category can be broadly divided into structures and equipment. The structures portion is comprised mainly of industrial and commerical buildings—such as factories, offices and stores—but it also includes mining shafts, oil rigs, telephone and electrical transmission towers and wires, rail beds, and other such structures. The equipment category includes all types of machinery, plus trucks and cars, and other types of equipment such as office furniture.

One distinction between the two types of fixed capital is that structures are generally expected to remain in use longer than equipment. That is important from a planning standpoint, since it means that equipment will have to be replaced more quickly, and hence the time for recovering the investment cost is shorter. Also, an individual piece of equipment is likely to cost less than a structure, or an addition to a structure. Consequently, it may be easier to make an investment decision on equipment—the overall expense is less and the recovery period is shorter. By the same reasoning, adverse economic conditions, most especially uncertainty over future conditions, are likely to put a heavier drag on investment in structures. Indeed, in recent years, the average age (amount of time in use) of structures has been rising faster than that of

Capital/Labor Ratio

Capital Stock Per Hour Worked



equipment. This suggests that conditions have favored investing in equipment relative to structures. The data on the average age of fixed capital show a lowering of the age in the 1960's following the enactment of the investment tax credit, a point that has been cited in current discussions of possible investment-oriented tax cuts.

The constant-dollar value of the nonfarm business capital stock rose by an average of 2.7% annually from 1948 to 1979. This indicates that, in addition to replacing worn-out stock, a great deal of expansion and modernization of capital has been occurring. Today's stock of structures and equipment is more sophisticated, more complicated, more costly (and possibly more subject to breakdown) than the stock of 30 years ago. These are the tools that have been used to produce a higher standard of living.

The total number of worker-hours in nonfarm business rose by 1.3% annually, on average, from 1948 to 1979. Thus, the capital-labor ratio, measured as capital stock per worker-hour, was rising by 1.4% per year over the last three decades. That is a critical element in the rise of average output per worker.

In 1979, the average capital-labor ratio in nonfarm business was $18.58 per worker-hour, in terms of 1972 prices; in 1979 prices it was over $30. But this does not imply that a capital expenditure of that magnitude was needed in order to get one more worker-hour of employment, because the additional employment would not necessarily require added plant and equipment.

Ken Goldstein

Sources: Bureau of Economic Analysis; American Productivity Center; The Conference Board.

ECONOMIC ROAD MAPS

Eva Calen, Editor — Chuck N. Tow, Lead Chartist

Prepared in The Business Conditions Analysis Department—Lora S. Collins, Director

Prices for Quantities of this chart will be supplied on request to Information Service.

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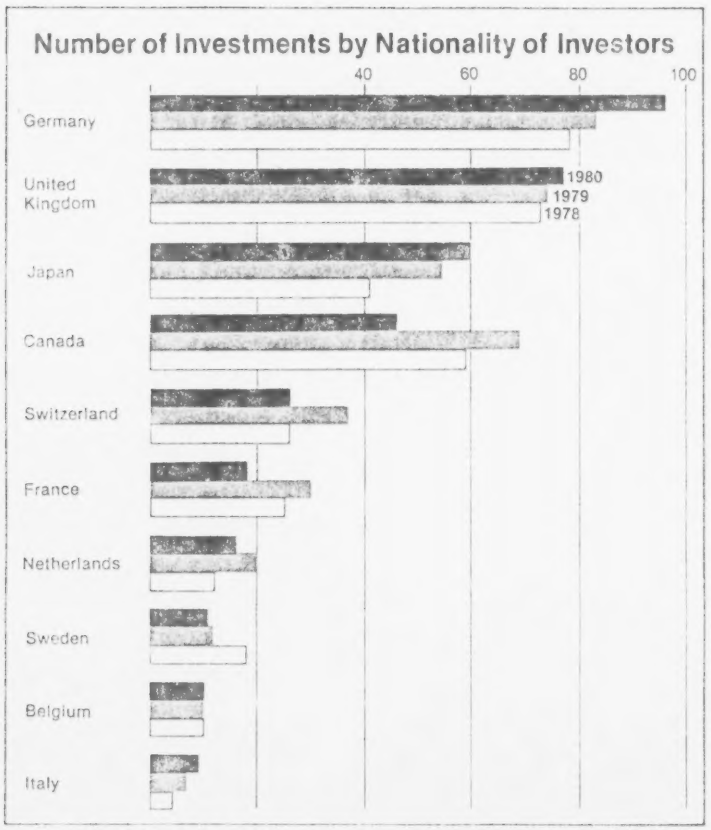
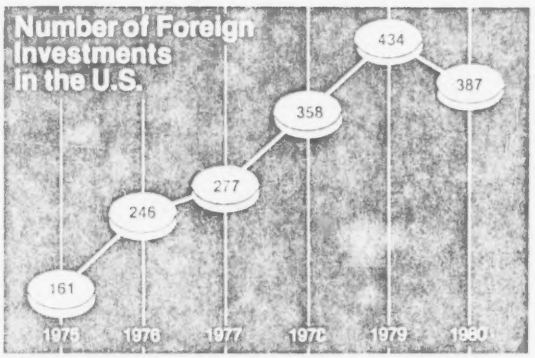
Foreign Manufacturing Investments in the United States

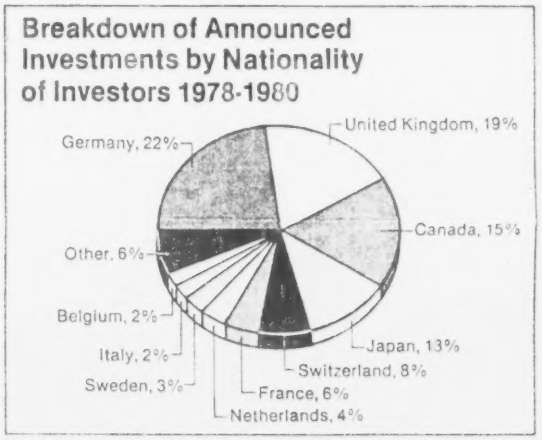
Economic Road Maps

Nos. 1898-1899 March, 1981

The current expansion of foreign companies in the United States is similar in some respects to the rapid growth of U.S. companies in Europe during the 1960's. One similarity is the recognition that, for the most part, exports can achieve only a limited penetration of a foreign market, and that substantial sales may well be attainable only by establishing manufacturing facilities in those markets. A major dissimilarity is that foreign firms in the United States are unlikely to achieve the large market shares in some major industrial sectors that U.S. firms have attained in Europe.





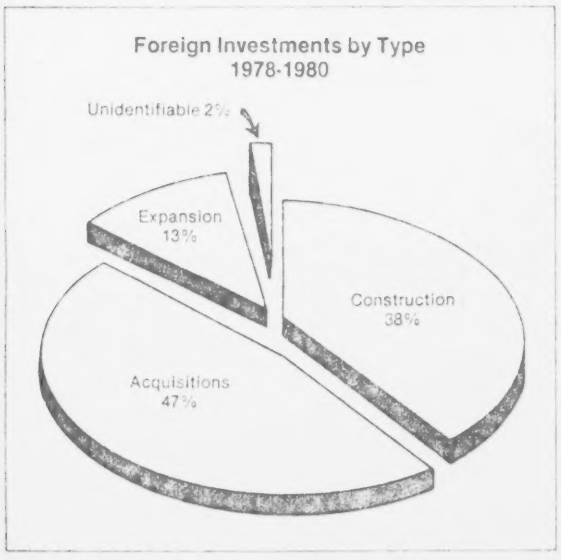


The establishment of manufacturing facilities in the United States by foreign firms occurs so frequently now that the recent origin of these investments is often overlooked. Prior to the 1970's, most foreign producers preferred to export to this country. In a relatively short span of time, however, several events occurred that diminished the prospects for growth of export sales to the United States and increased the attractiveness of establishing U.S. manufacturing facilities.

In 1971, the United States suffered the first deficit in its merchandise trade balance since 1888. Subsequent trade deficits, fueled partly by the jump in oil prices which began in 1974, spawned fears that growing protectionist sentiment would curb the expansion of foreign producers' sales in this country. Many foreign firms came to believe that only manufacturing facilities located within the United States would ensure a continued growth in their sales.

Announcements of New Plant Construction by Selected Country and State, 1978-1980

	California	Connecticut	Florida	Georgia	Illinois	Maryland	Massachusetts	Michigan	New Jersey	New York	North Carolina	Ohio	Pennsylvania	South Carolina	Tennessee	Texas	Virginia
Canada	2		2	3	1			1	1	11	3	1		4	2	3	
Belgium	1			1	1		1			1	2			4	1	2	1
France	3	2		1					1	1	2		1	2		4	2
Germany	2	3	2	9	3	2	1	6	8	4	12	3	2	10	4	8	8
Italy						1	2		4	2			1				1
Japan	24	1		14	1		1		3	4	4	3			5	8	1
Netherlands				3								1			1	2	2
Sweden		2					2		1		1	1	1				1
Switzerland	1	2			1		2		3	2	3	1		5	1	1	
United Kingdom	6			6		1	1		1		7	3	4			4	3



Even if the threat of protectionism had not materialized, many foreign firms were persuaded that the growth in exports that occurred during the 1960's could not be expected to continue. Many of their U.S. customers, fearful that foreign supplies could be interrupted—for instance, by a strike of dock or transportation workers in either the United States or abroad—put a limit on their purchases of foreign-made goods. Foreign firms were gradually convinced that this type of sales resistance could be overcome only by locating production facilities in the United States.

The attraction of the United States as a production site was enhanced by a major shift in the geographical pattern of production costs. In the early 1960's, wages (which typically account for one-half to three-quarters of total production costs for manufacturers) were far higher in the United States than in any other major industrial country. But compensation paid to workers outside the United States grew more rapidly during the last half of the 1960's and the first half of the 1970's. By 1975, many foreign firms found that the differential between compensation in the United States and other countries had been sharply reduced and, in some cases, eliminated. Between 1965 and 1975, for example, average compensation of U.S. manufacturing workers increased by 80 percent. In Canada, Japan, Germany, the Netherlands, Sweden and the United Kingdom, the increases were 109%, 307%, 150%, 213%, 162%, and 207%, respectively. Citibank estimates that, in 1975, hourly compensation in the Netherlands and Sweden was $7.52 and $8.27, as compared with $7.27 in the United States. In those countries where compensation was lower than in the United States, many manufacturers found that the cost of shipping and insurance eliminated price advantages stemming from lower compensation payments.

Factors other than compensation sometimes encouraged plant location in the United States. In Japan, an acute shortage of land suitable for industrial development and a near total

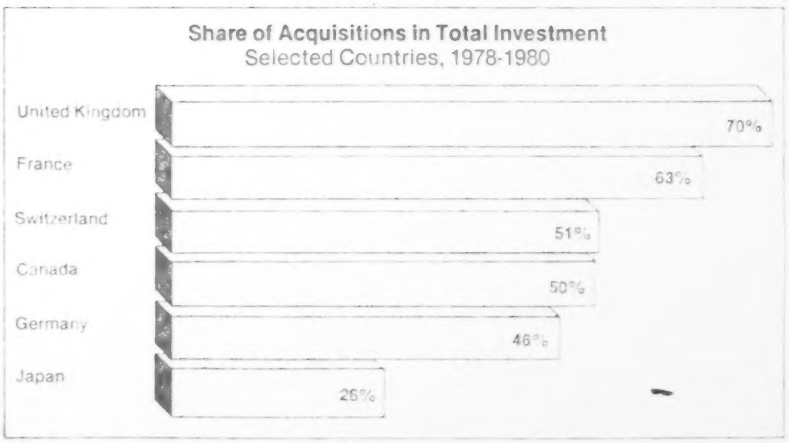
Announcements of New Plant Construction by Selected Country and Industry, 1978-1980

	Apparel	Chemicals	Electrical Machinery	Fabricated Metals	Food	Furniture	Instruments	Lumber	Nonelectrical Machinery	Paper	Petroleum	Primary Metals	Printing & Publishing	Rubber	Stone, Clay & Glass	Textiles	Transportation Equipment
Canada	2	2	4	3	8		1	1	8	4	1	5		2	6		2
Belgium		1		1	1				2			1	1			1	
France		4	5	3	3				3			2		3			1
Germany		23	14	10		1	3	2	28			2	1	3	7	2	6
Italy			1		1				3			1		1	1		2
Japan		5	31	1	5	1	6	1	11	1		7		4	2		3
Netherlands		7	2		1				1		2	1		2			1
Sweden		3		1			1		1				1				1
Switzerland		3	2	1			4	1	4	1	1		1	6		3	
United Kingdom		12	6	5	2			1	5	1	1		3	5	2	1	4

dependence on imported oil prompted some firms there to locate in the United States. In Germany, a large number of paid holidays, restrictions limiting layoffs, and worker participation in management decision making caused many firms to look favorably at the United States.

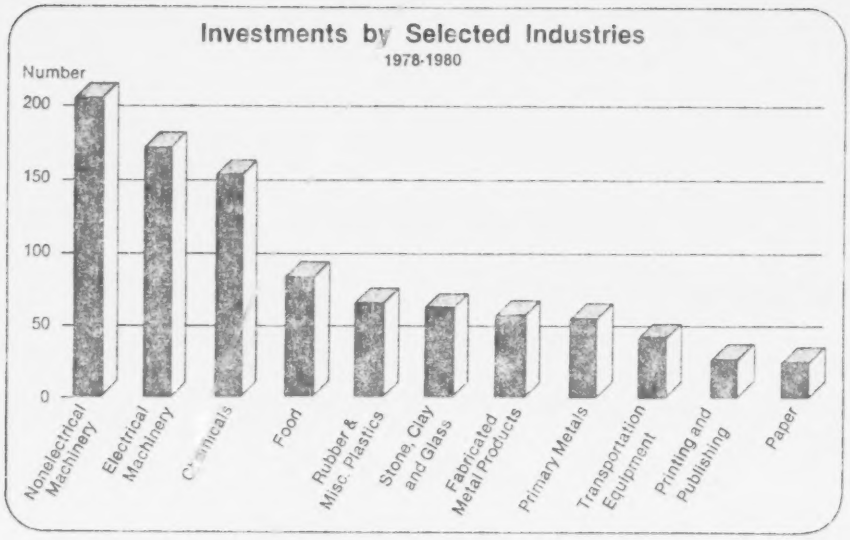
The devaluation of the dollar in the early 1970's is often cited as a major factor in encouraging investments. But exchange rate fluctations are probably more important in explaining purchases of short-term liquid securities than in accounting for investments in "brick-and-mortar" that are expected to generate sales and profits over a long period of time.

In the early 1970's, foreign investments in the United States consisted largely of new plant construction; prior to 1974, acquisitions accounted for less than 25% of all investments. In subsequent years, however, as foreign firms became familiar with operating in the United States, they became better able to evaluate the strengths and weaknesses of U.S. companies. Acquisitions then became a realistic alternative to plant construction.



Acquisitions (defined here to include the purchase of a single manufacturing plant from a U.S. company as well as the purchase of an entire U.S. firm) now account for roughly half of all foreign investments.

At the end of 1979 (latest data available), the net book value of all foreign direct investment in the United States was $52.3 billion, according to the U.S. Department of Commerce. Investment in the manufacturing sector totaled $20.0 billion: Canada accounted for the largest share ($3.6 billion); followed by the United Kingdom and the Netherlands ($3.5 billion each); Germany ($2.4 billion); Switzerland ($2.2 billion); and Japan (0.7 billion). Investments in the manufacturing sector by the OPEC nations totaled less than $52 million. Total OPEC direct investment at the end of 1979 was $400 million, of which over one-half was invested in real estate—largely office



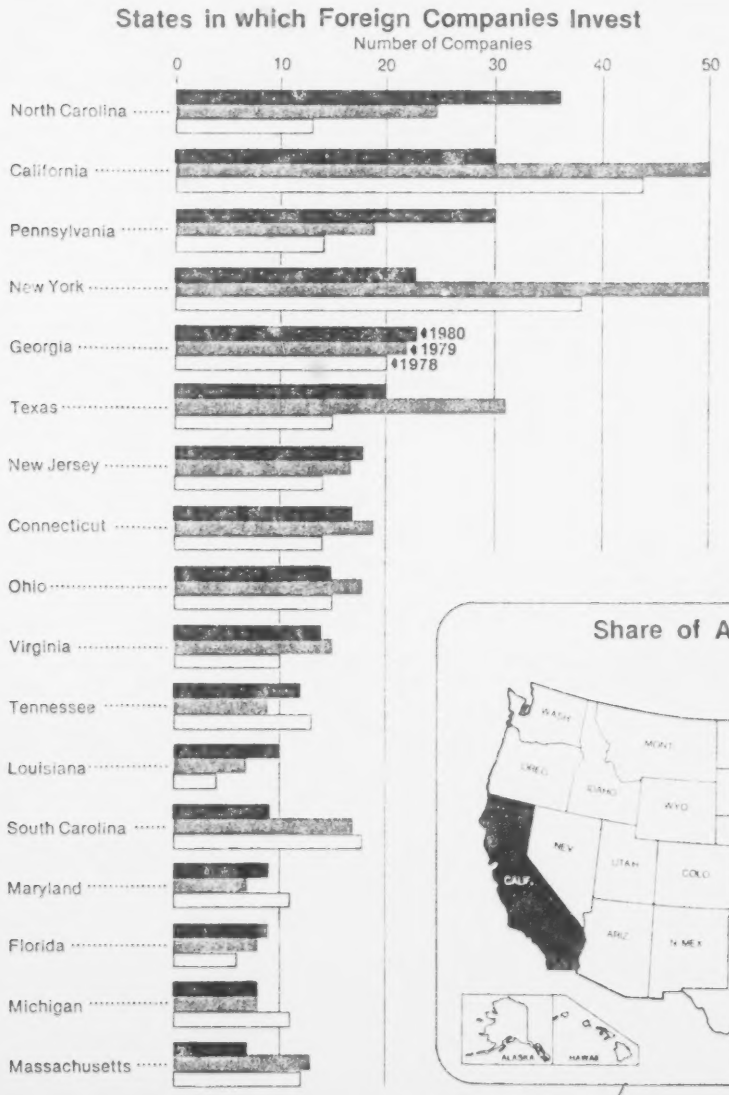
buildings located in major metropolitan areas of the United States. To date, the OPEC nations have shown vastly more interest in portfolio than in direct investment in the United States.

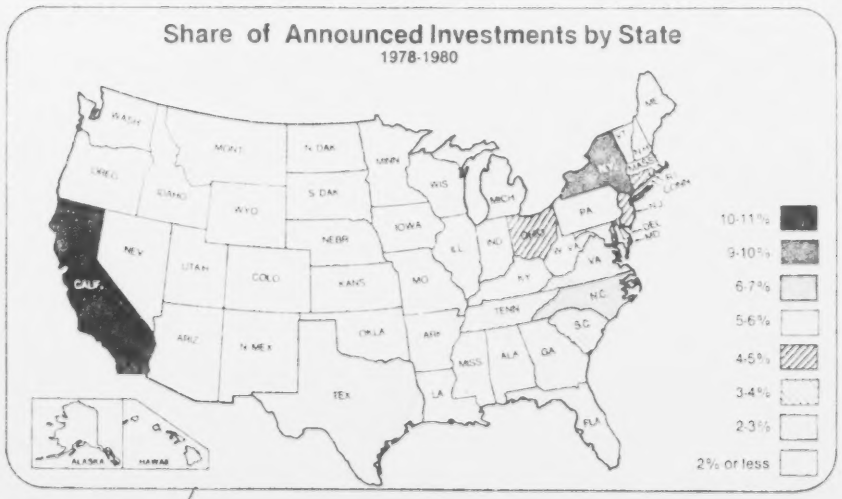
Data on employment generated by foreign direct investment are available only for 1977. In that year, all foreign firms in the United States employed slightly more than 1.1 million persons, the great majority of whom were U.S. citizens. Roughly 111,000 were employed in both New York and California; other states accounting for a large share of employment were New Jersey (81,000); Illinois (69,000); Texas (64,000); Pennsylvania (58,000); Ohio (54,000); North Carolina (42,000); Michigan (40,000); and Indiana, Wisconsin and Georgia (29,000 each).

According to the U.S. Department of Commerce, employment in all nonbanking foreign-owned companies in the United States grew by about 3% annually between 1974 and 1977—a rate which exceeded the growth in employment for most U.S. firms. Compensation received by workers in foreign-owned nonbanking companies rose at an annual rate of 13.2% between 1974 and 1977, as compared with a rate of 9.9% for domestic companies. Foreign-owned manufacturing firms employed 618,000 people in 1977.

David Bauer

Source: The Conference Board. Eva Culen





ECONOMIC ROAD MAPS

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Prepared in The Business Conditions Analysis Department—Lora S. Collins, Director

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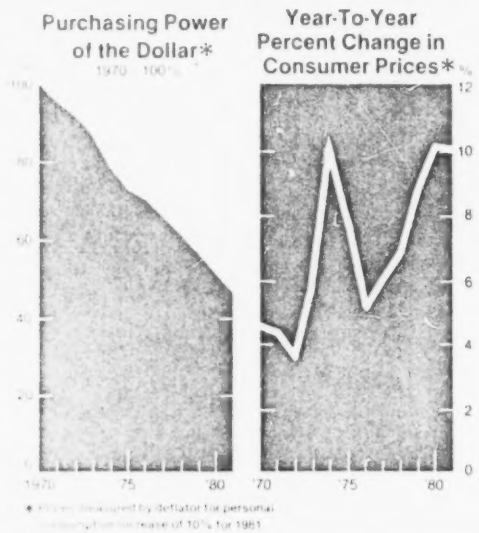
The Two-Way Squeeze, 1981

Economic Road Maps

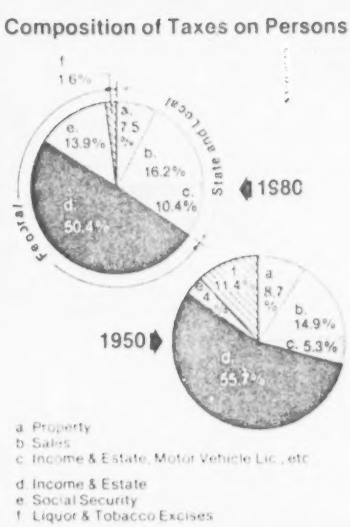
Nos. 1900-1901

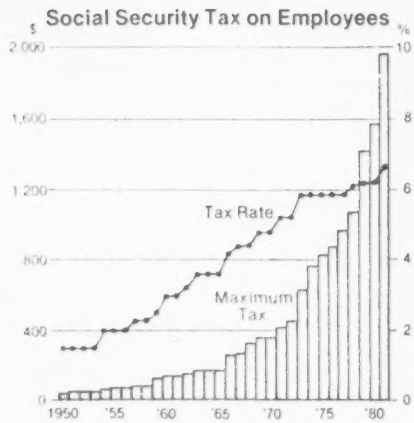
April, 1981

If the consumer price level rises 10% from 1980 to 1981, then a dollar this year will have only 47% of the purchasing power that a dollar had in 1970. Back then, the average pretax family income was just under $10,000. If a family had $10,000 in 1970, it needs $22,477 now to have the same after-tax purchasing power that it enjoyed then. Most of this required increase is due to the inflation that has cut the purchasing power of a dollar by more than half. Although federal income taxes have been cut during the decade, the middle-income family has been affected in recent years by "bracket creep" as inflation of its money income pushes it into higher tax brackets. And the social security tax has also come to take a large bite from incomes. These calculations refer only to federal income and social security taxes, because state and local taxes vary widely.

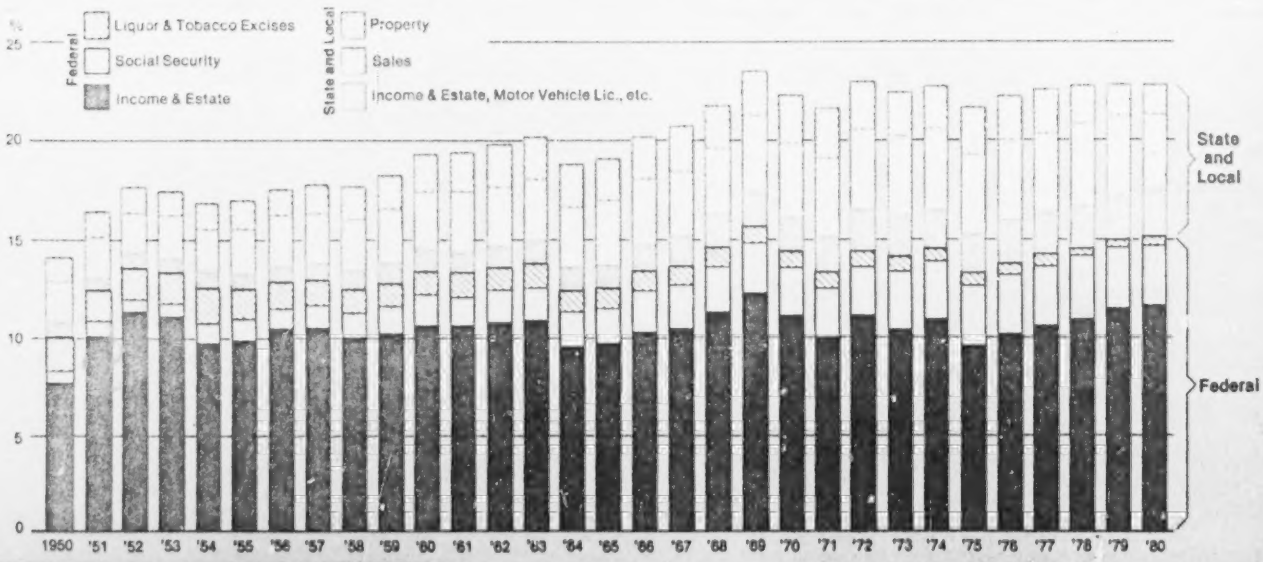


* Figures computed by deflator for personal consumption expenditures, assuming increase of 10% for 1981





Taxes on Persons as Percent of Total Personal Income, 1950-1980



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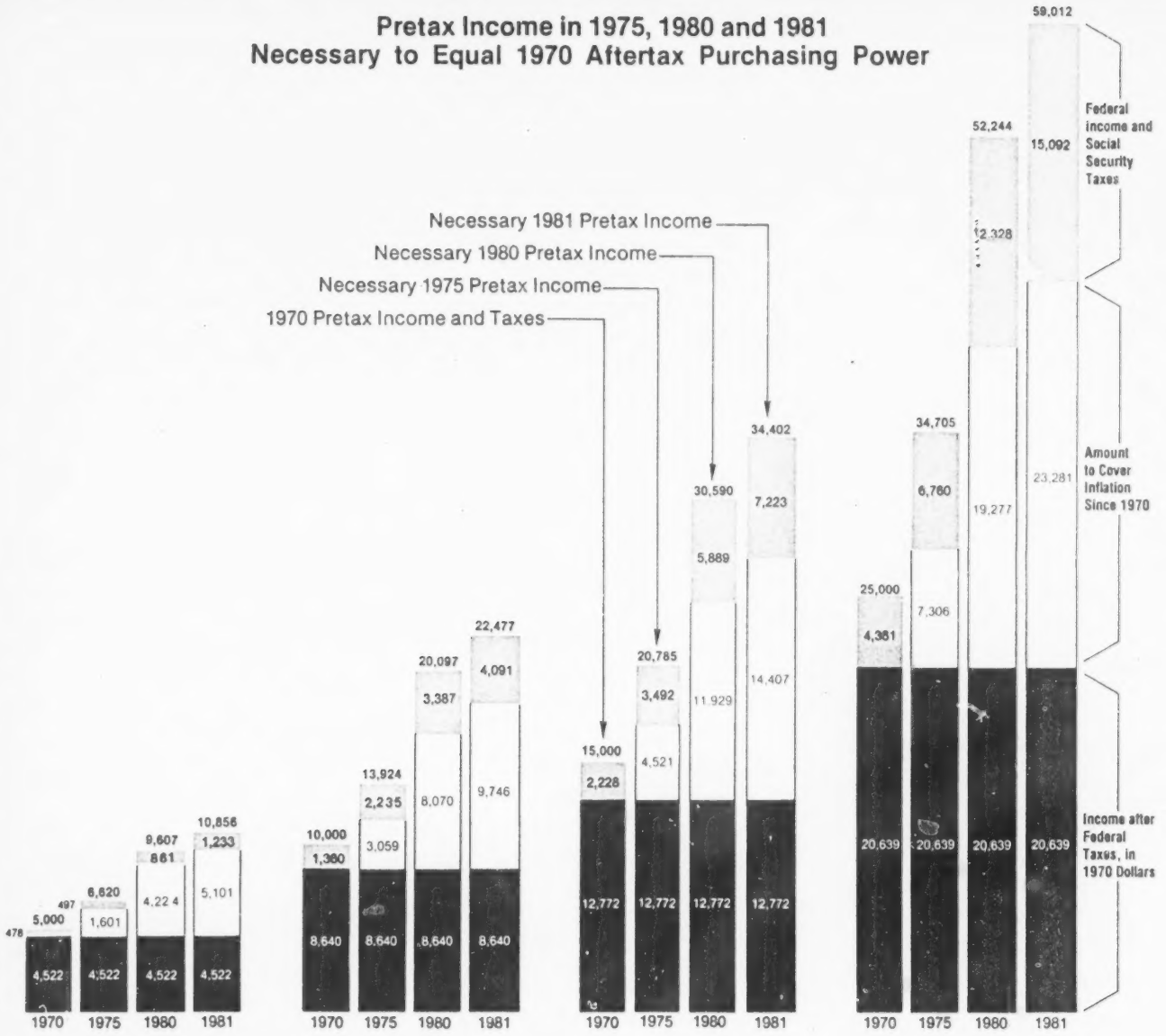
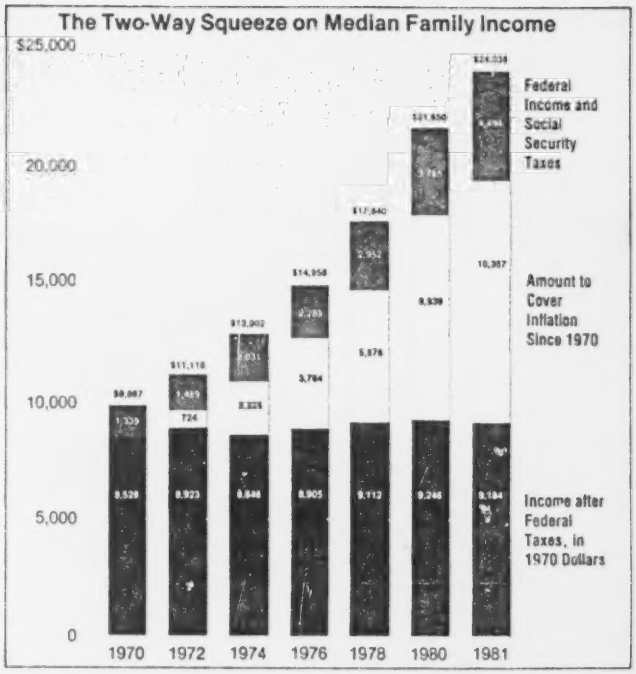
Pretax Income in 1975, 1980 and 1981 Necessary to Equal 1970 Aftertax Purchasing Power



	$ 5,000	$10,000	$15,000	$25,000	$ 50,000
1970 PRETAX INCOME					
Less: Federal income tax	238	986	1,854	3,987	11,982
Less: Social security tax	240	374	374	374	374
Equals: Income after federal taxes	4,522	8,640	12,772	20,639	37,644
1975 NECESSARY PRETAX INCOME	**6,620**	**13,924**	**20,785**	**34,705**	**70,592**
Less: Federal income tax	110	1,411	2,667	5,935	18,797
Less: Social security tax	387	814	825	825	825
Less: Amount to cover inflation since 1970	1,601	3,059	4,521	7,306	13,326
Equals: Income after federal taxes, in 1970 dollars.	4,522	8,640	12,772	20,639	37,644
1980 NECESSARY PRETAX INCOME	**9,607**	**20,097**	**30,590**	**52,244**	**106,282**
Less: Federal income tax	272	2,155	4,301	10,740	31,891
Less: Social security tax	589	1,232	1,588	1,588	1,588
Less: Amount to cover inflation since 1970	4,224	8,070	11,929	19,277	35,159
Equals: Income after federal taxes, in 1970 dollars.	4,522	8,640	12,772	20,639	37,644
1981 NECESSARY PRETAX INCOME	**10,856**	**22,477**	**34,402**	**59,012**	**119,098**
Less: Federal income tax	511	2,597	5,248	13,117	37,017
Less: Social security tax	722	1,495	1,975	1,975	1,975
Less: Amount to cover inflation since 1970	5,101	9,746	14,407	23,281	42,462
Equals: Income after federal taxes, in 1970 dollars.	4,522	8,640	12,772	20,639	37,644

Federal income and social security taxes are computed for a married couple, only one of whom works, with two children. No allowance is made for any other taxes. Calculations use the tax laws in effect each year. Deductible items are assumed to equal 17% of pretax income in 1970, 20% in other years. For calculating maximum tax and earned income credit, all income is assumed to be earned, personal service income. Inflation is calculated from the deflator for personal consumption spending, with a 10% rise assumed from 1980 to 1981.

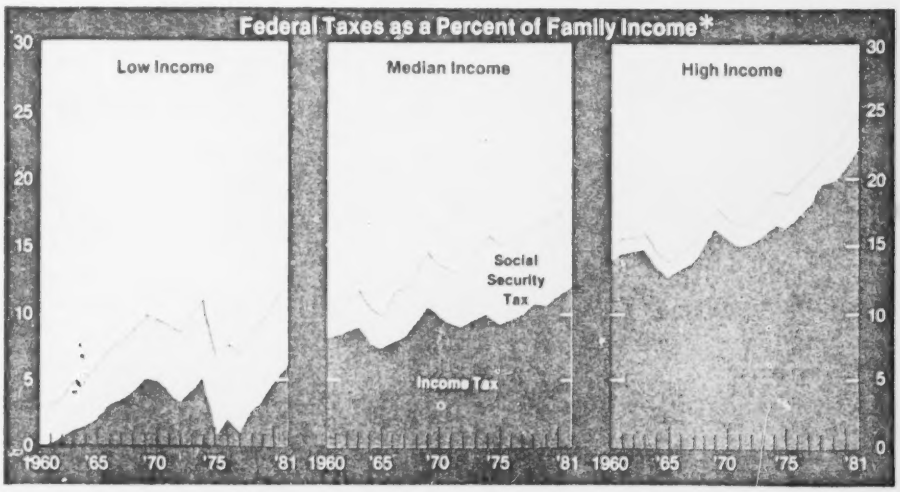
Effect of Proposed 1981 Tax Changes					
1970 Pretax Income	$5,000	$10,000	$15,000	$25,000	$50,000
Necessary 1981 Pretax Income, Current Tax Law	10,856	22,477	34,402	59,012	119,098
Necessary 1981 Pretax Income, Assuming Tax Changes	10,812	22,291	34,062	57,969	117,565

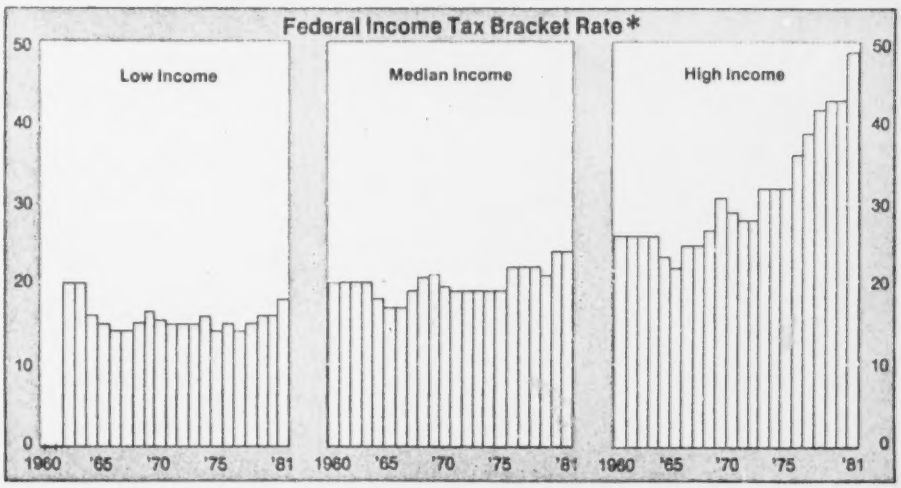


The chart on page 2 shows calculations of income before and after federal taxes for a hypothetical family of four at various income levels. (The assumptions used are outlined at the foot of the chart.) The 1970 income levels of $5,000, $10,000, $15,000, and $25,000 represent approximately the 20th, 50th, 80th, and 95th percentiles of the 1970 income distribution. The family that had $10,000 then needed $20,097 in 1980 and will need $22,477 this year in order to stay even with its 1970 after-tax purchasing power. Over $9,700 of the 1981 after-tax income is needed to cover inflation since 1970. Bracket creep is at work, too. Last year, this hypothetical family's marginal tax rate was 21%; this year it is 24 percent. In 1970, the $10,000 employee paid a social security tax of $374; in 1981, the social security tax on $22,477 of earnings is $1,495. A chart on page 1 shows the escalation of social security taxes. The maximum tax has been boosted both by the rising rate and by the rise in the taxable income limit, from $7,800 in 1970 to $29,700 this year.

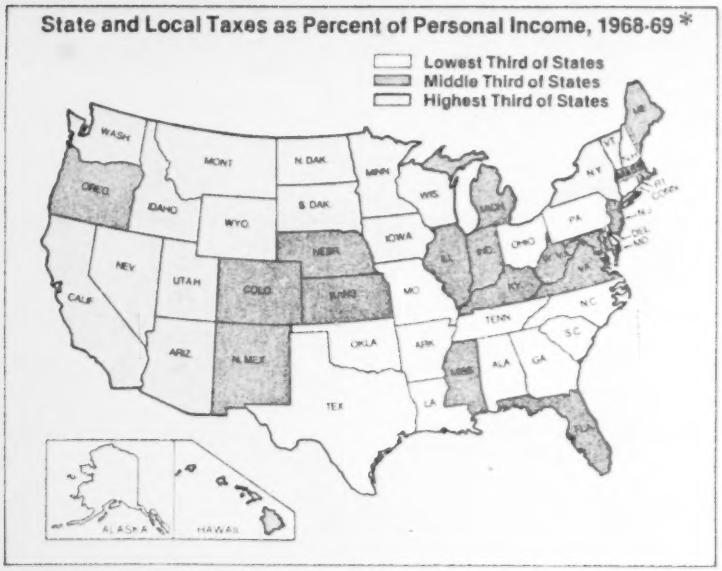
The Reagan Administration proposes to cut personal tax bracket rates by almost one-third over three years. The cut in 1981 would be only 5%, however. The effect in 1981 is indicated in the table above, which shows the "necessary" 1981 pretax incomes as calculated on page 2 and the "necessary" amounts assuming the Administration's proposal passes.

Page 2 refers to hypothetical families. The chart at the upper right of page 3 refers to the "average" real family—that is, the one at the median income level each year. Assumptions have to be made in order to calculate this family's taxes, and the ones used are those listed on page 2—even though the 4-person, 1-earner family is not truly representative. The latest actual data on family income are for 1979, when the median was $19,684. The 1980 and 1981 incomes shown here are guesstimates. The middle chart on page 3 shows





*Family income each year at the 20th, 50th, and 95th percentiles of the family income distribution. Income levels estimated for 1980 and 1981. Calculations assume 4-person family with one earner, as stated in table on page 2.

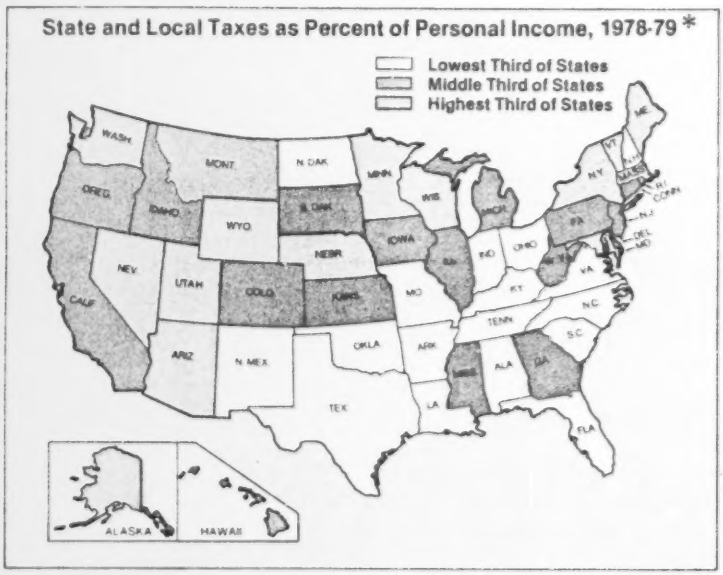


that federal income tax is taking 12% of the median family's income in 1981 and social security tax 6.7%, for a total of 18.7%; the total in 1970 was 13.6 percent. The lower panel shows that bracket creep has affected the median income family, although less dramatically than in the high-income case. The sharp recent rise in the tax take from the low-income family mainly reflects the decreasing value of the "earned income credit" as money incomes have risen.

Although it is not feasible to include state-local taxes in these calculations, it is possible to see in the lower chart on page 1 that total state-local taxes on persons have been around 8% of total personal income in recent years, with a slight downtrend, while the federal burden has edged

State and Local Taxes as Percent of Personal Income, 1968-69 and 1978-79 *

	1968-1969	*1978-1979*		*1968-1969*	*1978-1979*		*1968-1969*	*1978-1979*		*1968-1969*	*1978-1979*		*1968-1969*	*1978-1979*
ALA	9.0	9.4	HAW	13.5	14.0	MASS	11.0	13.7	NM	10.8	10.1	SD	12.7	11.1
ALAS	8.7	14.0	IDA	11.9	10.6	MICH	11.0	11.1	NY	13.6	15.8	TENN	9.2	9.5
ARIZ	12.7	13.5	ILL	9.6	10.7	MINN	11.6	12.7	NC	9.1	10.0	TEX	8.7	8.9
ARK	9.1	8.9	IND	10.0	9.4	MISS	11.0	10.8	ND	12.3	9.0	UTAH	11.6	12.2
CAL	13.0	10.9	IOWA	12.0	10.7	MO	9.3	9.6	OHIO	8.9	9.2	VT	12.5	13.1
COLO	11.3	11.7	KANS	11.0	10.4	MONT	11.6	11.2	OKLA	9.3	8.6	VA	9.8	10.2
CONN	8.5	10.5	KY	10.2	9.9	NEBR	11.4	15.6	OREG	11.4	11.1	WASH	11.6	11.8
DEL	8.8	11.2	LA	8.6	9.4	NEV	11.9	12.5	PA	9.4	11.0	WVA	10.6	11.6
FLA	10.5	9.8	ME	11.0	12.1	NH	9.2	8.9	RI	10.0	12.0	WIS	12.4	12.7
GA	9.3	10.4	MD	10.7	12.0	NJ	9.6	11.5	SC	8.8	10.1	WYO	12.9	13.4



up. Some sense of the interstate variation of tax burdens can be seen on page 4. These ratios of taxes to personal income are not directly comparable to those on page 1; the principal difference is that these figures include all property taxes while the page 1 calculations include only those on residential property.

In the 1978-1979 fiscal year, the highest ratio of state-local taxes to personal income was 15.8% in New York and the lowest was 8.6% in Oklahoma. Taxes per capita tend to be lower in the South, but incomes there are also relatively low. However, the maps—by relating taxes to incomes—show that, even allowing for this the South is generally a low-tax region.

Lora S. Collins

Sources: Bureau of the Census; Bureau of Economic Analysis; Internal Revenue Service; The Conference Board.

* Taxes: State and local tax receipts of all types, except severance and corporate income, for fiscal years ending in the 12 months preceding June 1969 and June 1979.
Income: personal income in calendar 1968 and 1978.

ECONOMIC ROAD MAPS

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Prices for Quantities of this chart will be supplied on request to Information Service.

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